

Page 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

No. 1:22-cv-00033-JB-JFR

THE ESTATE OF NENA CHARLEY,
by and through Personal Representative,
TIMOTHY CHARLEY, TIMOTHY
CHARLEY, as parent and next friend of
NILE CHARLEY, and TIMOTHY CHARLEY,
Individually,
Plaintiffs,

vs.

THE UNITED STATES OF AMERICA, ROBIN
RANELL SALES, R.N., JOELLE CATHERIN
CERO GO, R.N., AB STAFFING SOLUTIONS,
LLC, a Foreign Corporation, NEXT MEDICAL
STAFFING, a Foreign Corporation, and JOHN or
JANE DOE, Corporation,

Defendants.

VIDEOTAPED DEPOSITION OF GREGORY JAMES MERTZ, MD

January 11, 2024

10:07 a.m.

CURTIS & CO.

215 Central Avenue, NW, Third Floor

Albuquerque, New Mexico 87102

PURSUANT TO THE NEW MEXICO RULES OF CIVIL
PROCEDURE THIS DEPOSITION WAS:

TAKEN BY: MS. LISA K. CURTIS
ATTORNEY FOR THE PLAINTIFFS

REPORTED BY: Penny E. McAlister, CCR, NM CCR #250
TRATTEL COURT REPORTING & VIDEOGRAPHY
P.O. Box 36297
Albuquerque, New Mexico 87176-6297

Page 38

1 be that if you can establish a presumptive clinical
2 diagnosis that -- in a patient in the cardiopulmonary phase
3 of hantavirus, that that's an urgent situation requiring,
4 ideally, that patient should be moved as quickly as
5 possible to a situation where they have access to
6 arteriovenous or venoarterial ECMO.

7 Q. And just so, you know, like everybody
8 understands, what's the reason why you want ECMO to be
9 involved quickly to treat a patient that has hantavirus?

10 MR. EATON: Objection to the form.

11 A. The -- so if you can establish the presumptive
12 clinical diagnosis in a patient in the cardiopulmonary
13 phase, that's the phase where virtually all patients get
14 admitted to the hospital, and we know that without ECMO,
15 most deaths occur within 40 hour- -- 48 hours. So
16 that's -- that's why I con- -- consider it urgent.

17 Q. And -- and I'm just going to -- I'll ask you for
18 some definitions.

19 A. Uh-huh.

20 Q. And -- and you're good at explaining things in a
21 way that lay people can understand. So when I'm asking for
22 a definition, I'm really -- like if you were talking to
23 somebody that's not medically trained at all. All right.
24 So when you say cardiopulmonary phase, just define what
25 that means, you know, so a layperson would understand what

Page 40

1 one of -- that's common to many self-limited processes,
2 including viral and -- viral infection. So they get better
3 on their own.

4 Q. Uh-huh.

5 A. After they -- after a period of -- in that
6 prodrome, the person enters the cardiopulmonary phase, and
7 it's very rapid. They begin to cough, and they short- --
8 they have shortness of breath. They're going to become
9 hypoxic, meaning that the amount of oxygen in their blood
10 is going to be abnormally low. Chest X-ray will show
11 bilateral changes, abnormalities.

12 Almost all will -- will require some nasal oxygen
13 at that point, and then those that are destined to have
14 severe disease, within either -- either hours or maybe up
15 to two -- largely, no more than two days, will progress to
16 a severe disease where they have respiratory failure and
17 cardiogenic shock, and that's the -- and if they're in the
18 hospital, so they don't die from lack of oxygen, because
19 they're being oxygenated, typically, they die from
20 cardiogenic shock, and that can come on exceedingly
21 rapidly.

22 I mean, I've seen patients who progress from
23 having -- talking to me with a little nasal cannula in
24 their nose, getting 2 liters of oxygen, to cough, saying I
25 feel -- I feel terrible, to full cardiac arrest and CPR

Page 39

1 you mean.

2 A. So that is -- that is the second clinical phase
3 of hantavirus, cardiopulmonary syndrome, so the -- so I'm
4 going to backtrack.

5 Q. Okay.

6 A. So there's -- if a person becomes infected with
7 hantavirus, there's an incubation period that averages
8 three to four weeks. It can be as long as 49 days, where
9 the person has no symptoms. In the latter stages of that
10 incubation period, when the person is asymptomatic, virus
11 can be detected in -- in blood, in particular in -- in
12 peripheral white blood cells, but there is no antibody
13 produced yet. The body isn't producing an immune response
14 that we can detect.

15 The patient then moves into the febrile prodrome,
16 and that's a -- the prodrome lasts for several days,
17 probably an average of three. During that time, we can
18 detect antibodies to the virus and the -- and the immune
19 response, other immune responses to the virus, and the
20 patients have a constellation of symptoms: Fever, muscle
21 ache, nausea, vomiting. They don't have to have all of
22 them at once, but --

23 Q. Sure.

24 A. -- diarrhea, and they don't have to have all of
25 them, but it's a -- but the constellation of symptoms is

Page 41

1 within 20 minutes, that it's just a -- it's a terrifying
2 thing to -- to see. That's the cardiopulmonary phase.
3 So --

4 Q. Uh-huh.

5 A. -- that last one, I would say with the severe
6 cardiopulmonary disease. The other one -- some -- some
7 patients will -- will perk along and never -- never require
8 any more -- any more active intervention other than oxygen
9 support, but --

10 Q. Okay. And so since I was talking about the
11 triage concept --

12 A. Uh-huh.

13 Q. -- and we know that during the prodrome phase
14 that it can be detected that a patient has hantavirus if
15 the right sets of tests are done on them; right?

16 MR. EATON: Objection, form and foundation.

17 A. Could you define what you mean by the right set
18 of tests and --

19 Q. No. I'm going to ask you to define the right set
20 of tests here in a bit. So my -- my basic question about
21 being able to triage a patient, identify them when they're
22 in the prodrome phase, where they can be tested, and it can
23 be determined that it's likely that they have hantavirus,
24 isn't it important to catch the disease during that phase?

25 MR. EATON: Objection, form and foundation.

11 (Pages 38 to 41)

Page 42

1 A. I wi -- I wish it were -- were feasible, but
2 it's not. It's largely not.

3 Q. Well, I disagree with you about that, but I -- I
4 don't know what the --

5 A. On what basis?

6 Q. -- testing is about if that's not the point. So
7 let's do this. You're aware that there is testing or --
8 during the prodrome phase that will rule in the likelihood
9 that a patient is experiencing hantavirus; right?

10 MR. EATON: Objection to the form and
11 foundation.

12 A. No. I disagree.

13 Q. Okay. So --

14 A. And --

15 Q. -- that's fine.

16 A. -- I disagree -- I disagree in -- in -- if -- if
17 we're talking about testing that can provide realtime
18 information to you. So, for example, there is testing.
19 There is antibody testing. There's PCR -- there is PCR.

20 Q. Just tell us what PCR means.

21 A. Polymerase chain reaction. It's a -- you know,
22 the kind of testing you would have for COVID if -- in the
23 doctor's office, as compared to the antigen testing you do
24 at home.

25 Q. Uh-huh.

Page 44

1 that this witness is incapable of answering the question
2 about what tests are available during the prodrome phase
3 that can rule in or out or at least give some indication
4 whether hantavirus exists.

5 So do you believe this witness is incapable of
6 answering that question?

7 MR. EATON: No. My concern is that your
8 question has a false premise in it.

9 MS. CURTIS: That's a form objection.
10 That's --

11 MR. EATON: Okay. Then if --

12 MS. CURTIS: Okay.

13 MR. EATON: -- that's --

14 MS. CURTIS: So my question --

15 MR. EATON: -- if that's how --

16 MS. CURTIS: -- is about foundation.

17 MR. EATON: -- you're giving, was a form
18 objection, that's how I was using foundation. If you are
19 laying an improper foundation of your question, then that's
20 my concern. If your question has a false premise in it,
21 I'm going to object to foundation.

22 I also objected to form. If you want to view it
23 as a form question, that's fine. You've asked for my
24 clarification. I've provided it. My concern on the
25 foundational side is your question has a potential false

Page 43

1 A. So -- but realistically, those tests, in
2 particular, if we're talking about a rural hospital, are
3 not available. The results aren't available quickly enough
4 to impact care.

5 Q. So what tests do we give in the prodrome phase to
6 try to rule in or out the potential for a hantavirus?

7 MR. EATON: Objection, form and foundation.

8 A. The --

9 Q. Just a second.

10 MS. CURTIS: I'm going to ask the question,
11 why foundation? Why would this witness not know the answer
12 to that question?

13 MR. EATON: The issue is you're presuming
14 facts that are not necessarily accurate. You're assuming
15 that testing even occurs during the prodrome phase for
16 hantavirus, when the presumption is -- or you're presuming
17 that they would even be on the radar for it.

18 So the foundation issue is you are putting in a
19 fact -- a necessary premise in your question that was
20 probably false, that people aren't even aware that
21 hantavirus is a potential in the prodrome, that there is
22 enough demarcation that you can identify the potential for
23 hantavirus and -- I don't know if that makes sense.

24 MS. CURTIS: It -- it doesn't for a
25 foundation objection. Your foundation objection is saying

Page 45

1 premise.

2 MS. CURTIS: Yeah.

3 MR. EATON: (Inaudible.)

4 MS. CURTIS: So I heard you. That's --
5 my -- my ask from you -- and I think I heard the answer --
6 is that -- because I want to make sure whether or not you
7 believe this witness is capable of asking (sic) a question
8 about laboratory testing on patients that have hantavirus
9 during the prodrome phase, and what I'm hearing you say is
10 you understand that Dr. Mertz is capable of answering those
11 questions as an expert; is that right?

12 MR. EATON: He can answer -- I mean, he can
13 answer.

14 MS. CURTIS: Okay. I just want to make sure
15 you're not objecting to him not being capable of answering,
16 because he's not the right expert for that.

17 MR. EATON: No. And I never said that,
18 so --

19 MS. CURTIS: Okay. So that's why I asked
20 about the foundation objection --

21 MR. EATON: Okay.

22 MS. CURTIS: -- to begin with. Okay.

23 Q. (By Ms. Curtis) So I'm -- we are talking about a
24 particular phase of hantavirus, and I want to know if there
25 are tests, were they to be done on a patient during the

12 (Pages 42 to 45)

Page 50

1 a patient that is, for whatever reason, suggestive to the
2 provider that they have hantavirus. I want to know what
3 the tests are that should be ordered for that patient that
4 is in the prodromal phase, obviously not in the
5 cardiopulmonary phase.

6 MR. CHECKETT: Form and foundation.

7 MR. EATON: Join.

8 **A. So an antibody test could be ordered. A PCR**
9 **could be ordered. A -- a CBC might be ordered from the**
10 **stan -- might be ordered from the standpoint that if you**
11 **get back a CBC with a totally normal platelet count, you**
12 **sort of stop going in that direction, but understanding**
13 **that the results of the antibody test and PCR, if -- if --**
14 **if available.**

15 **It's available in -- where I collaborated in**
16 **Chile. It's largely -- it's not widely available in the**
17 **United States, but those results are not going to come back**
18 **fast enough to -- to help you.**

19 Q. Do you know where -- whether GIMC has a PCR test
20 or an antibody test, either one?

21 **A. I don't -- I'm confident that at the time that**
22 **this patient was seen that they had neither the antibody**
23 **test for hantavirus nor PCR for hantavirus. Things have**
24 **changed a bit with COVID, where PCR equipment has now**
25 **become more widely available in -- outside tertiary**

Page 51

1 **referral centers, that kind of thing, but that, at that**
2 **point, was not available.**

3 Q. Okay. So they can't do the testing and even send
4 it anywhere?

5 MR. EATON: So can you repeat that, Lisa? I
6 didn't hear that.

7 Q. So they can't do the testing and even send it
8 anywhere?

9 **A. They could draw a sample and send it somewhere.**

10 Q. Okay. Do you know if they do that?

11 **A. They did in this -- in this case.**

12 Q. Sure. So that would mean they could; right?

13 **A. Yes, and the result came back after she died.**

14 Q. Sure. So if they had done it sooner -- you have
15 to assume the same day, they would be able to draw the same
16 sample, right, and send it out?

17 **A. It would not have impacted --**

18 Q. So not my --

19 **A. -- this patient.**

20 Q. -- question, Dr. Mertz. All right. I just need
21 you to --

22 MR. CHECKETT: Let him answer the question.
23 You ask a question, and he answers. If it does not answer
24 your question, ask another one, but you can't --

25 Q. I just need --

Page 52

1 MR. CHECKETT: -- cut him off.

2 Q. -- you to answer my question, okay, because
3 otherwise, I have to move to strike your answer --

4 **A. I know.**

5 Q. -- and I don't want --

6 **A. No.**

7 Q. -- to do that.

8 **A. No. I understand. It just seemed like you**
9 **followed with a conclusion that I hadn't provided.**

10 Q. Yeah. So I'm not. I just take one question at a
11 time. I'm just asking --

12 **A. Yeah. It's --**

13 Q. -- you the one question.

14 **A. Right.**

15 Q. Okay. So we know for a fact, because of later
16 things that occurred with Nena Charley --

17 **A. Uh-huh.**

18 Q. -- that, in fact, GIMC does have the capability
19 to draw a sample and send off that sample for antibody
20 testing for hantavirus; right?

21 **A. Yes.**

22 Q. Okay. So that -- that meant that definitely
23 earlier, within the same 24-hour period, they still have
24 that ability. You know that; right?

25 MR. CHECKETT: Foundation, form.

Page 53

1 MR. EATON: Join.

2 MS. CHANEZ: Join.

3 **A. You're -- well, you're saying that now we're**
4 **talking about this specific case, and the -- and the -- the**
5 **earlier ER evaluation.**

6 Q. I'm talking about the time period and what was
7 available at GIMC. That's what I'm talking about, and --

8 **A. So could they have drawn the test then? Yes.**

9 Q. Okay. And so as far as teaching or training that
10 goes into the healthcare providers over at GIMC, right, to
11 know what to ask the patient, like environmental factors,
12 that's not something that you would be aware of for that
13 time period; right?

14 MR. CHECKETT: Foundation.

15 MR. EATON: Join.

16 **A. I'm not -- I'm not familiar with specific**
17 **training format during that time period.**

18 Q. Or the efforts that are being undertaken by IHS
19 to teach the patient population about hantavirus, you're
20 not familiar with that either. I think I understand that
21 from your earlier answer.

22 MR. EATON: Objection, form and foundation.

23 **A. I'm not familiar with what they're doing with the**
24 **general population.**

25 Q. Okay. And so is there anybody at UNM -- I mean,

14 (Pages 50 to 53)

<p style="text-align: right;">Page 58</p> <p>1 chapters. I included copies to you, since I thought you 2 would have a hard time finding them going from my CV. 3 Q. Okay. I just want to be -- I just want to make 4 sure that, you know, we're really thorough. If there are 5 chapters that you think qualify as having treatment 6 guidelines in them or clinical management guidelines -- 7 A. Uh-huh. 8 Q. -- I'd like to make sure that we've highlighted 9 all of those, please. 10 A. Okay. 11 Q. So we're having trouble -- go ahead. You go 12 ahead and do what you're doing. 13 MS. CURTIS: The version of information that 14 was sent to us for Dr. Mertz is for internal use only, and 15 we cannot open the link. So we've asked that that link be 16 sent to us -- 17 THE WITNESS: Uh-huh. 18 MS. CURTIS: -- in a way that we can open, 19 but it hasn't occurred. 20 MR. EATON: Let's -- could we go off the 21 record. It's faster making the call. 22 MS. CURTIS: Yeah. 23 THE VIDEOGRAPHER: The time is 11:42 a.m. 24 We are going off the record. 25 (A recess was taken.)</p>	<p style="text-align: right;">Page 60</p> <p>1 A. You know, as -- particularly, in use- -- in 2 discussing it during a presentation or whatever the -- 3 people ask about things they're unclear of, so they're -- 4 they're probably clarifying changes, but they're minor. I 5 mean, the -- the basic format is the same. They're focused 6 on the cardio- -- on patients in the cardiopulmonary phase. 7 Q. Okay. Any of these talk at all about the 8 prodromal phase? 9 A. In -- to the degree that they would discuss it, 10 they'll large- -- they'll -- they'll be discussing the 11 challenges, the difficulty of recognizing the infection in 12 the prodromal phase, that unlike the cardiopulmonary phase, 13 which has some really characteristic aspects to it, and a 14 set of guidelines that we -- and diagrams we've even 15 included that will help you establish the -- the -- a 16 presumptive clinical diagnosis that -- that we can't -- we 17 don't have the same for the prodrome. 18 Q. And the -- 19 A. And it was -- it's stated in some manner like 20 that. 21 Q. And so the clinical management for hantavirus, 22 the -- what you've referenced here in two 2020 articles and 23 2022, is there any difference between what's recommended as 24 guidelines in those publications versus the ones that 25 predate 2017?</p>
<p style="text-align: right;">Page 59</p> <p>1 THE VIDEOGRAPHER: The time is 11:53 a.m. 2 We are back on the record. 3 Q. (By Ms. Curtis) Okay. During our break, because 4 we're having a little trouble accessing the US attorneys 5 files that were sent to us for your documents, I had you a 6 take a look at your CV, which is Exhibit 1, for the 7 articles or chapters that might have to do with treating 8 hantavirus, and you have done that; is that right? 9 A. I tried -- I focused on the ones where there 10 might be -- I included in the publication that reference 11 the treatment guidelines, manage -- or management 12 guidelines. 13 Q. And it looks like we go from 2002 to 2022. Does 14 that sound right, for the time period that you've been 15 writing this -- these guidelines or clinical manual? 16 A. Yeah. There -- there will be -- well, there's a 17 pu- -- there's a publication in 2023 that's not -- doesn't 18 have treatment guidelines in it, so I wouldn't have 19 highlighted it, and there's another one that's listed as 20 submitted, and it's really -- it's not relevant. 21 Q. There's a -- a publication in 2017 and one in 22 2015, one in 2013. Do you think that the guidelines are 23 different for how to treat hantavirus between those three? 24 A. They will be very close. 25 Q. Okay.</p>	<p style="text-align: right;">Page 61</p> <p>1 A. There probably are minor differences in wording, 2 but not -- not in the main mess- -- not in the main 3 message. 4 Q. So I guess what I'm really trying to get to is, 5 like is there some big drastic change -- 6 A. Has there been a breakthrough? 7 Q. -- between 2013 -- 8 A. No. 9 Q. -- and the current time? 10 A. No. 11 Q. Okay. So I can talk about what's ever in the 12 2020 and 2022 articles for hantavirus in 2019, because that 13 treatment concept should be -- should be the same; is that 14 right? 15 A. I'll let you -- maybe if you -- I mean, you -- 16 you -- if you can -- better if you present, you know, a 17 specific question regarding what those guidelines are. 18 Q. Okay. I just -- 19 A. But I'm -- but I said -- I said that I don't 20 think that they've substantially changed in that period. 21 So if someone reading something in something publi- -- 22 published in '13 or '15 is -- or in -- and -- or 23 partici- -- or logging into that CDC talk that CDC put 24 together -- 25 Q. Uh-huh.</p>

16 (Pages 58 to 61)

<p style="text-align: right;">Page 82</p> <p>1 Q. -- might have been exposed to hantavirus; right?</p> <p>2 MR. EATON: Objection --</p> <p>3 MR. CHECKETT: Foundation.</p> <p>4 MR. EATON: Join.</p> <p>5 A. To -- to what degree that has occurred, I -- I</p> <p>6 can't tell you --</p> <p>7 Q. Okay. But you --</p> <p>8 A. -- but in terms of content, it sounds reasonable.</p> <p>9 Q. Okay. And -- and so the clinical presentation</p> <p>10 that is taught to clinicians about what to look for, did</p> <p>11 you read that in Dr. Iralu's deposition?</p> <p>12 MR. EATON: Objection to the form.</p> <p>13 MR. CHECKETT: Join.</p> <p>14 A. I saw a reference to it. I can't -- I can't</p> <p>15 remember how much de- -- detail was provided in his</p> <p>16 deposition.</p> <p>17 Q. Okay. And -- and do you realize that what's</p> <p>18 being taught out at GIMC is not just recognizing that</p> <p>19 cardio- -- what did you call it that is --</p> <p>20 A. Cardiopulmonary phase.</p> <p>21 Q. Okay. That's what I thought. I just didn't want</p> <p>22 to say it wrong. Okay. The -- let's me restart that</p> <p>23 question. Do you understand what's being taught at GIMC is</p> <p>24 not just how to recognize a cardiopulmonary phase, but also</p> <p>25 how to rec- -- recognize through asking questions about</p>	<p style="text-align: right;">Page 84</p> <p>1 A. Clinicians.</p> <p>2 Q. Okay. But not the clinicians over at GIMC.</p> <p>3 You're talking about some kind of general environment of</p> <p>4 infectious disease, where you're doing something generally</p> <p>5 to --</p> <p>6 MR. EATON: Objection --</p> <p>7 Q. -- understand if somebody has a differential</p> <p>8 diagnosis of hantavirus; right?</p> <p>9 MR. EATON: Objection, form and foundation.</p> <p>10 MR. CHECKETT: Same. Join.</p> <p>11 A. I -- I -- I -- I disagree.</p> <p>12 Q. So --</p> <p>13 A. I mean, I'm not a -- I'm not an emergency room</p> <p>14 doc at GIMC, but I -- so I don't agree with the way</p> <p>15 you've -- you've characterized what -- what they -- their</p> <p>16 mindset. I -- I don't -- no, I don't agree with that.</p> <p>17 Q. Do you understand that patients with hantavirus</p> <p>18 may present with vague symptoms?</p> <p>19 A. Yes.</p> <p>20 MR. CHECKETT: Foundation.</p> <p>21 Q. Do you understand there are certain symptoms that</p> <p>22 are more likely when a patient has hantavirus as the</p> <p>23 diagnosis?</p> <p>24 MR. CHECKETT: Form and foundation.</p> <p>25 MR. EATON: Join.</p>
<p style="text-align: right;">Page 83</p> <p>1 exposure whether a patient might have been exposed to</p> <p>2 hantavirus, who has some of these same symptoms that would</p> <p>3 be in other regular acute viral syndromes?</p> <p>4 MR. EATON: Objection, form and foundation.</p> <p>5 MR. CHECKETT: Join.</p> <p>6 MS. CHANEZ: Join.</p> <p>7 A. I don't recall what focus that they would have</p> <p>8 had in their training of -- of -- in educational activities</p> <p>9 to healthcare providers.</p> <p>10 Q. Okay. You have been part of very specific</p> <p>11 training, though, that has been about that, right, not just</p> <p>12 picking up the cardiopulmonary phase, but talking to the</p> <p>13 patient who has what looked like regular acute viral</p> <p>14 symptoms and finding out their potential for exposure, so</p> <p>15 you can decide whether to do further testing; right?</p> <p>16 MR. EATON: Objection, form.</p> <p>17 MR. CHECKETT: And foundation. Join.</p> <p>18 A. And I'm -- I don't believe that the way you're</p> <p>19 describing that is something that we have focused on.</p> <p>20 You're describing things that -- well, so I -- I -- I think</p> <p>21 my answer to that is no, not -- that's not what we have</p> <p>22 focused on, in part because of the frustration in sorting</p> <p>23 out the -- these patients from everyone else coming in with</p> <p>24 similar signs and symptoms.</p> <p>25 Q. Who is the we in that sentence right there?</p>	<p style="text-align: right;">Page 85</p> <p>1 A. No, I don't agree in the prodromal. If we're</p> <p>2 talking -- when we're talking about the prodromal phase, I</p> <p>3 don't agree. I wish that were the case, where we could --</p> <p>4 Q. So --</p> <p>5 A. -- have a -- an algorithm like we do for the</p> <p>6 cardiopulmonary phase, where we could present that</p> <p>7 algorithm and say -- ask this, ask that, and we don't.</p> <p>8 Q. Okay. So let's knock some of this out, and then</p> <p>9 I'll -- and I'll try to make sure that you have context, so</p> <p>10 you're stating what you mean to state. All right. So the</p> <p>11 cardiopulmonary phase, tell us what the signs and symptoms</p> <p>12 are that you would expect in that hantavirus patient.</p> <p>13 A. In -- in addition to the prodromal symptoms.</p> <p>14 Q. Which are what?</p> <p>15 A. Muscle ache, fever, feeling a sensation of having</p> <p>16 fever, nausea, vomiting, diarrhea. The -- the</p> <p>17 characteristic thing about the progression to the -- to</p> <p>18 cardiopulmonary phase is rapid progression initially into</p> <p>19 respiratory failure with cough, shortness of breath, low --</p> <p>20 low blood oxygen, abnormally low blood oxygen, and in the</p> <p>21 severe cases, signs of shock, low blood pressure.</p> <p>22 Q. So in the prodromal phase --</p> <p>23 A. And -- oh, another -- another finding would be</p> <p>24 the chest -- so the -- the chest X- -- the abnormal chest</p> <p>25 X-ray, but we -- if you -- that -- that would be -- that's</p>

22 (Pages 82 to 85)

<p style="text-align: right;">Page 98</p> <p>1 be some other -- some other plan that you come up with, but</p> <p>2 these are things that are negotiated between the -- the</p> <p>3 clinicians, based on the specific situation with that</p> <p>4 patient.</p> <p>5 Q. So have you seen the teaching, even in your --</p> <p>6 your own personal experience, that if a patient is showing</p> <p>7 a low platelet count, vague symptoms that could be part of</p> <p>8 the prodromal phase, that a center with experience on</p> <p>9 treating hantavirus should be contacted?</p> <p>10 MR. CHECKETT: Form, foundation.</p> <p>11 MR. EATON: Join.</p> <p>12 MS. CHANEZ: Join.</p> <p>13 A. If that's -- I'm just trying to -- to get my head</p> <p>14 around whether -- if that's the only thing. They're not --</p> <p>15 and I want to get back to this specific case with the</p> <p>16 initial emergency room visit, where --</p> <p>17 Q. I need you to just answer my question. Okay.</p> <p>18 Mr. Eaton --</p> <p>19 MR. CHECKETT: He's trying to answer your</p> <p>20 question.</p> <p>21 Q. -- is going to be able to ask you questions, or</p> <p>22 Mr. Checkett or Ms. Chanez.</p> <p>23 A. Yeah.</p> <p>24 Q. I just need you to answer my questions.</p> <p>25 MR. CHECKETT: Please don't let the -- well.</p>	<p style="text-align: right;">Page 100</p> <p>1 worth a phone call at that point to discuss, and -- and</p> <p>2 then there would be some discussion about how -- what level</p> <p>3 of concern there was in that situation.</p> <p>4 So it doesn't apply to this patient, but in the</p> <p>5 situation where, you know, the patient comes in, volunteers</p> <p>6 all this stuff, and there would be -- then there would be</p> <p>7 a -- a phone call with a discussion, not an automatic</p> <p>8 transfer, but a -- some -- I can imagine some discussion</p> <p>9 of where hantavirus might fit in, in the -- in the</p> <p>10 differential diagnosis.</p> <p>11 Q. You do want to get to hantavirus and the</p> <p>12 diagnosis as soon as possible, don't you?</p> <p>13 MR. EATON: Objection, form and foundation.</p> <p>14 MR. CHECKETT: Join.</p> <p>15 A. Yes. And that's been a -- with the -- our</p> <p>16 challenge with the nonspecific nature of the prodrome.</p> <p>17 It's been a -- a really frustrating area.</p> <p>18 Q. So I'm going to ask you the question again and</p> <p>19 ask you just to answer it.</p> <p>20 A. Uh-huh.</p> <p>21 Q. Okay? Is it important, and do you understand, as</p> <p>22 an expert in hantavirus, that you want to get the diagnosis</p> <p>23 of hantavirus as soon as possible?</p> <p>24 MR. EATON: Objection, form and foundation</p> <p>25 asked and answered.</p>
<p style="text-align: right;">Page 99</p> <p>1 A. Yeah. I'm just having a problem where you're --</p> <p>2 you're saying, well hantavirus is being considered. There</p> <p>3 is just so many unknown -- and -- unknowns there. What is</p> <p>4 it that's gotten you to that point, so --</p> <p>5 Q. I know, but can you answer the question about</p> <p>6 when it is being considered, because of the training and</p> <p>7 the people --</p> <p>8 A. In the prodromal --</p> <p>9 Q. -- get --</p> <p>10 A. In the prodromal phase, you've gotten to the --</p> <p>11 the clinician outside is considering hantavirus.</p> <p>12 Q. Because of the environmental factors, because of</p> <p>13 the symptoms that the patient has in particular. So</p> <p>14 they've --</p> <p>15 MR. CHECKETT: Form.</p> <p>16 Q. -- got signs and symptoms that would be</p> <p>17 consistent with hantavirus. They have strong environmental</p> <p>18 exposure facts within a -- a window that would be important</p> <p>19 to the clinician.</p> <p>20 MR. EATON: Objection, form and foundation.</p> <p>21 A. So as a hyp- --</p> <p>22 MR. CHECKETT: Join.</p> <p>23 A. -- a hypothetical situation, it doesn't apply to</p> <p>24 this initial emergency room visit of -- that this patient</p> <p>25 had. I can imagine some training saying, well, it would be</p>	<p style="text-align: right;">Page 101</p> <p>1 MR. CHECKETT: Answer as you see fit.</p> <p>2 A. Are you talking about a definitive diagnosis,</p> <p>3 a -- a discussion of whether the diagnosis is in the</p> <p>4 differential diagnosis, a presumptive clinical diagnosis</p> <p>5 with high level of -- of -- of probability? Because</p> <p>6 they're all different. Those are all different situations,</p> <p>7 but in the case --</p> <p>8 Q. Are similar --</p> <p>9 A. -- where -- in a case where you have a definitive</p> <p>10 diagnosis, which is uncommon in -- in a call from a</p> <p>11 referral hospital --</p> <p>12 Q. Sure.</p> <p>13 A. -- or a -- or a presumptive clinical diagnosis,</p> <p>14 which is actually fairly common, because it -- it's</p> <p>15 something that we've gotten recent pretty good at in</p> <p>16 patients in the cardiopulmonary phase, time is of the</p> <p>17 essence and getting to the definitive diagnosis is less</p> <p>18 important to me.</p> <p>19 Q. Okay. So I was going to back -- since you -- I</p> <p>20 was going to backtrack, because you gave multiple different</p> <p>21 potential options.</p> <p>22 A. Uh-huh.</p> <p>23 Q. All right. So in the situation where you have a</p> <p>24 presumptive hantavirus diagnosis, isn't it important to try</p> <p>25 to get that patient to treatment, because, to use your</p>

26 (Pages 98 to 101)

<p style="text-align: right;">Page 122</p> <p>1 Q. Uh-huh.</p> <p>2 A. This, I -- I will not.</p> <p>3 Q. Okay. And again, just so the people on Zoom, the</p> <p>4 statement that's released by the New Mexico Department of</p> <p>5 Health, can you just read that first line, please.</p> <p>6 A. New Mexico Department of Health (DOH) Scientific</p> <p>7 Laboratory Division reports three people with hantavirus</p> <p>8 pulmonary syndrome discovered within the last two weeks,</p> <p>9 bringing the" 2 -- 2023 total to five.</p> <p>10 Q. Okay. And I did highlight one section down there</p> <p>11 at the bottom. Could you read that out loud?</p> <p>12 A. Yeah. "Chances for recovery are better if</p> <p>13 medical attention is sought early and the healthcare</p> <p>14 provider is given a report about environmental contact with</p> <p>15 rodents."</p> <p>16 Q. Okay. And is this your understanding in general,</p> <p>17 that the public are told that if they have actually been in</p> <p>18 contact with rodents, that there's even information that's</p> <p>19 put out publicly, that they should tell their healthcare</p> <p>20 provider about that, or is this the first time you've seen</p> <p>21 it?</p> <p>22 MR. EATON: Objection --</p> <p>23 MR. CHECKETT: Foundation.</p> <p>24 MR. EATON: -- to form and foundation.</p> <p>25 MS. SHERRELL: Join.</p>	<p style="text-align: right;">Page 124</p> <p>1 A. Uh-huh.</p> <p>2 Q. And if you -- if you look at the second page, I</p> <p>3 think it talks a little bit about the idea of using ECMO,</p> <p>4 portable ECMO, and when it was received by UNM, and see if</p> <p>5 that refreshes your recollection about when UNM was in</p> <p>6 possession of a mobile ECMO.</p> <p>7 A. It -- it -- well, I mean, this would suggest that</p> <p>8 it was around that period, and we talked earlier about</p> <p>9 the -- that 2017 article not reflecting that as a</p> <p>10 possibility, which made it seem like there was -- and</p> <p>11 they're also focus- -- and this article, of course, focuses</p> <p>12 on heart attack survival, not -- not ECMO, but --</p> <p>13 Q. Sure. But it -- it does say that -- this article</p> <p>14 that's dated February 1st of 2018 --</p> <p>15 A. Uh-huh.</p> <p>16 Q. -- harkens back to the mobile ECMO being received</p> <p>17 around September. Did you see that on the second page?</p> <p>18 A. No. I -- I don't see that on the second page.</p> <p>19 Q. "UNMH received the smaller, portable ECMO machine</p> <p>20 around September," on the second page, third paragraph.</p> <p>21 MR. EATON: Do you mind if I --</p> <p>22 MS. CURTIS: No. Go ahead and find -- help.</p> <p>23 That's fine.</p> <p>24 A. Oh, around September. Okay. I see it.</p> <p>25 Q. Okay. So --</p>
<p style="text-align: right;">Page 123</p> <p>1 A. It's -- it appears that the -- that they're</p> <p>2 hoping to have patients think about hantavirus if they're</p> <p>3 sick, and mention if they've had environmental con- -- I</p> <p>4 mean -- so environmental contact, I -- I guess I wonder</p> <p>5 about why they would chose -- they chose that word for a</p> <p>6 lay public, for the lay public, but anyway -- but they're</p> <p>7 encouraging people to seek care early if they're worried</p> <p>8 about hantavirus, and that makes -- it's sort of common</p> <p>9 sense --</p> <p>10 Q. Uh-huh.</p> <p>11 A. -- good -- good advice to seek care early when</p> <p>12 you're sick.</p> <p>13 Q. So I was asking you some questions earlier, given</p> <p>14 that you're a doctor at UNM, and that portable ECMO</p> <p>15 machine --</p> <p>16 A. Uh-huh.</p> <p>17 Q. -- that you were talking about, I think there is</p> <p>18 some information about when that became something that was</p> <p>19 available through UNM.</p> <p>20 (Exhibit 7 was marked for</p> <p>21 identification.)</p> <p>22 Q. So I just wanted to show you Exhibit 7 about The</p> <p>23 device is what doctors call a portable "ECMO machine" and</p> <p>24 the way UNM doctors are using it is a first for New Mexico.</p> <p>25 Would you just take a look at that article?</p>	<p style="text-align: right;">Page 125</p> <p>1 A. So seven -- so at some point -- it looks like '17</p> <p>2 was actually when they -- according to this. I didn't see</p> <p>3 any of these. I've -- I've been in conversation for years</p> <p>4 with -- with critical care faculty members about the</p> <p>5 feasibility and whether discussions were occurring, but --</p> <p>6 Q. And let me hand you what we'll mark as Exhibit 8.</p> <p>7 (Exhibit 8 was marked for</p> <p>8 identification.)</p> <p>9 MS. CURTIS: I'm sorry. I'm trying to get</p> <p>10 somebody up here to send these. If you want to put 7 here,</p> <p>11 and then I'll send you 8. I'm trying to get somebody up</p> <p>12 here, so they can scan the things.</p> <p>13 Q. All right. And you know what Lifeguard is;</p> <p>14 right?</p> <p>15 A. Yeah.</p> <p>16 Q. Yeah. It's a helicopter; right?</p> <p>17 A. Uh-huh.</p> <p>18 Q. Yes?</p> <p>19 A. Yes.</p> <p>20 Q. Thank you. All right. So I -- I highlighted a</p> <p>21 line there. Could you just read what it is?</p> <p>22 A. "Adult extracorporeal membrane oxygenation."</p> <p>23 Q. So is that the long and fancy way to say ECMO?</p> <p>24 A. It's adult ECMO.</p> <p>25 Q. Okay. And where it says "Emergency Care in the</p>

32 (Pages 122 to 125)

<p style="text-align: right;">Page 170</p> <p>1 May 28th, it is understood that she has a mild form of 2 hantavirus, if that had been recognized and properly 3 treated, what is her chance of survival? 4 MR. EATON: Objection, form and foundation. 5 MS. SHERRELL: Join. 6 MR. CHECKETT: Form and foundation. Answer 7 as you wish. Go ahead. 8 A. Okay. So I think in her case, the best possible 9 outcome would -- with a number of steps that you don't want 10 me to describe, is somewhere -- maybe 25 percent, 50 11 percent chance, at best, survival. 12 Q. Seriously. 13 A. Yeah. 14 Q. If she was diagnosed at 1:30 in the morning and 15 properly treated, she was going to die? 16 A. Well, I don't know what you mean by properly 17 treated, because you -- 18 Q. So assume proper treatment, Dr. Mertz. I know 19 the Defendants do not want you to answer this question, all 20 right, but you've got a million pieces of literature that 21 all say that by reasonable medical probability, she should 22 have survived if she had been diagnosed and properly 23 treated. 24 A. Oh, I -- I disagree. 25 MR. EATON: Objection, form and foundation.</p>	<p style="text-align: right;">Page 172</p> <p>1 MS. CURTIS: All right. 2 MR. CHECKETT: I'll -- I'll play this video 3 back. The judge can listen to the whole thing. 4 MS. CURTIS: He certainly -- 5 MR. CHECKETT: You're not -- 6 MS. CURTIS: -- can. 7 MR. CHECKETT: You're not letting him 8 answer. 9 MS. CURTIS: He certainly can. 10 Q. Dr. Mertz, all right, do you understand my 11 question? Assuming proper treatment and what you believe 12 proper treatment is, all right, if people in the emergency 13 room did a presumptive diagnosis of hantavirus early in the 14 morning on the 28th, when Nena neoplasm first came in, by a 15 reasonable medical probability, more than 50 percent, would 16 she have survived? 17 MR. EATON: Objection, form and foundation. 18 MS. SHERRELL: Join. 19 MR. CHECKETT: Join. Join. 20 A. They -- they couldn't have established a -- a 21 presumptive diagnosis early -- 22 Q. Listen to my -- 23 A. -- in the morning. 24 Q. This is not -- 25 A. So it's a -- it's a --</p>
<p style="text-align: right;">Page 171</p> <p>1 A. I absolutely disagree with -- 2 MS. SHERRELL: I mean -- 3 A. -- that statement -- 4 MR. CHECKETT: So form and foundation. 5 A. -- that she -- you're saying that she would have 6 a hundred percent or close to a hundred percent chance -- 7 Q. No. 8 A. -- of survival? 9 Q. I just said any. 10 A. Well, I thought that's what you said. 11 Q. You just said 20 or 25 percent chance of survival 12 had she been properly diagnosed and treated at 1:30 in the 13 morning when she had mild hantavirus. You're saying she 14 was going to die by a 75 percent chance. Is that right? 15 MR. EATON: Objection, form and foundation. 16 MR. CHECKETT: Very argumentative, 17 inappropriate. 18 MR. EATON: I agree, and he's already 19 identified he needed to identify steps that you refuse to 20 allow him to answer. 21 MS. CURTIS: That is way, way past the 22 objections -- both of you -- that you're allowed to have. 23 You're contributing to the problem I'm having getting the 24 witness to just answer my question. 25 A. Well --</p>	<p style="text-align: right;">Page 173</p> <p>1 Q. -- the question. 2 A. I understand. 3 Q. The question -- 4 A. You're saying -- 5 MR. CHECKETT: You're cutting him off. 6 A. You're saying if they did something that's -- 7 that's -- that makes no -- that there's no basis for them 8 to be able to make a presumptive diagnosis. So they can do 9 something that we can't really do, would that have improved 10 her chances of survival? I mean, it's -- it's -- it -- 11 I'm -- I'm -- 12 Q. Why -- 13 A. -- I'm dumbfounded. 14 Q. So why won't you answer my question -- 15 A. I'm trying to. 16 Q. -- about whether mild hantavirus -- given the 17 signs and symptoms that Nena Charley had, if a doctor had 18 made a presumptive diagnosis, based on the information in 19 front of him, that that's what he had -- because he ran 20 tests. He did a chest X-ray. He did things, and so he 21 came up with a presumptive diagnosis -- 22 A. Can't do it. 23 Q. -- and he did what he should do, which is call 24 UNM and get her help right away, and she was properly 25 treated by the people at UNM. All right. If that happens,</p>

44 (Pages 170 to 173)

Page 174

1 right, all those things fall in line, whether you think
2 they should, or they shouldn't have, or they did, or they
3 didn't, if those things happened, what is Nena Charley's
4 chance of survival?

5 MR. EATON: Objection, form and foundation,
6 asked and answered.

7 MR. CHECKETT: Go ahead and answer it,
8 Doctor, the way you feel appropriate.

9 A. Yeah. I -- the -- the assumptions that they --
10 they're -- you're making unfounded -- you're implying to --
11 the way I hear it, is you're implying unfounded con- --
12 conclusions about the ability to reach a presumptive
13 diagnosis, after which, a lot of things have to happen, but
14 just that -- at the very beginning, you're making a -- an
15 un- -- im- -- you're implying they're going to be able to
16 make a presumptive diagnosis when she presents in that
17 first -- you know, 1:15, 1:18, whatever it was, in the
18 morning. It's just not -- it's -- it's -- it's -- it's
19 just not feasible.

20 Q. Dr. Hert -- Dr. Mertz, we have already
21 established I have a right to ask you hypothetical
22 questions. I have a right to do that, and that you need to
23 answer those because you've been delegated to be an expert
24 in this case.

25 I'm going to move to strike you if you will not

Page 176

1 for that, and physician at the other end is going to say,
2 well, I'm sorry that you don't. You may be considering it
3 in your differential. You don't have a -- what we would
4 consider a presumptive diagnosis.

5 So you're in trouble. Your hypothetical, in my
6 mind, is in trouble right at the beginning.

7 Q. I did not ask for an analysis of my hypothetical.
8 I just said that I need you to answer it. All right. So I
9 know you've heard my question multiple different times --

10 A. Uh-huh.

11 Q. -- but you're still not answering my
12 hypothetical. You can -- with Mr. Eaton on redirect at
13 trial, you can tear up my hypothetical all you want, all
14 right, but right now, you still have to answer it, the
15 hypothetical that I posed to you.

16 Nena Charley at GIMC emergency room May 28th,
17 about 1:30 in the morning. The physician makes the
18 presumptive diagnosis of hantavirus, and the proper
19 treatment is given to her for that mild hantavirus that she
20 presents with. What is her chance of survival?

21 A. I honestly --

22 MR. CHECKETT: Form, founda- --

23 MR. EATON: Join.

24 A. I honestly can't answer the question. I just
25 can't. There's -- it's so -- the -- it's to my -- the line

Page 175

1 answer my questions. All right. And the Defendants are
2 not -- the defense attorneys are not surprised by this.
3 They asked hypothetical questions of my experts, which I'm
4 sure you read, and they were answered.

5 So my hypothetical question is, if, on May 28th,
6 when Nena Charley came in about 1:30 in the morning, if the
7 doctor had made a presumptive diagnosis of hantavirus and
8 had taken all the proper steps and gotten her treated, what
9 was her chance of survival, in your opinion?

10 MR. CHECKETT: Form -- form, foundation.

11 MR. EATON: Join.

12 MS. SHERRELL: Join.

13 A. So you say -- if you're saying he could do
14 something, that I don't believe clinicians can do, fol- --
15 and followed that up, would it have -- what would her
16 prognosis have been? And I --

17 Q. Yeah. I'm saying that. If that had happened --

18 MR. CHECKETT: Let him finish. Let him
19 finish.

20 A. And he's got a -- I mean --

21 MR. CHECKETT: You cut him off.

22 A. -- first -- I mean, he's -- so the first thing
23 that comes to mind, he's -- say I have a presumptive
24 diagnosis, and he calls UNM, and he said I have a
25 presumptive diagnosis of hantavirus, and he gives the basis

Page 177

1 of thinking -- and I apologize, but it's so flawed and
2 un- -- ungrounded in medical practice and what we -- the
3 kind of information we can collect and use in that
4 situation that I just -- I can't answer the question. I --
5 I --

6 Q. So you're refusing to tell me what her chance --

7 A. I'm not.

8 Q. -- of survival is?

9 A. No.

10 MR. EATON: Objection to form. That's not
11 what he's stating.

12 A. I'm not --

13 Q. Don't --

14 MR. CHECKETT: Do not accuse -- he's
15 answering in front of --

16 MS. CURTIS: He's an expert. Stop
17 interrupting.

18 MR. CHECKETT: I'm sorry.

19 MS. CURTIS: He's an expert.

20 MR. CHECKETT: I'm sorry.

21 MS. CURTIS: Stop interrupting.

22 MR. CHECKETT: I'm not interrupting the
23 question and answer. It's your yelling at the witness.

24 MS. CURTIS: I am not yelling at a witness.

25 MR. CHECKETT: You surely are.

45 (Pages 174 to 177)

Page 190

1 A. I don't know how fast they come back there. I
2 mean, I -- an hour would be -- would not be unusual, but --
3 but it depends on whether you're -- I don't know if
4 their -- if their system is -- is all -- is all electronic
5 and how -- so, you know, come back.

6 How -- how soon does the clinician become aware
7 of the result? I think is the -- is the question. Is
8 it -- does it go into an electronic system? Is there a
9 paper? Is there a -- is there a panic call from the lab?
10 I don't -- the -- that. That's part of systems, and I -- I
11 don't believe a panic -- I don't remember seeing anything
12 about a panic call from the lab, where the physician would
13 have been -- but probably the nurse asked to immediately
14 identi- -- notify the physician, so --

15 Q. So --

16 A. It's about an hour. So I -- I looked at it.
17 It's about an hour between the time it was drawn and that
18 everyone gets aware of it. It strongly suggests
19 hantavirus. Everyone is thinking about it now.

20 Q. Okay. So in the vein of what I said earlier,
21 which is you're not an ER expert, so whether stat and what
22 that means in ordering laboratory values, I mean, do you
23 understand that stuff?

24 A. Yeah.

25 Q. That you've got to have it back immediately.

Page 192

1 were present in abnormally high numbers, were -- were
2 missed initially and then corrected.

3 Everything else was so characteristic that -- my
4 sense is that they reacted promptly to that.

5 Q. Okay. So I'm -- I'm going to ask you to do some
6 expert opinion work here. All right. So we take
7 everything that was found when she goes to the ER the
8 second time, right, and we back that up to the first time
9 she was at the ER. All right.

10 So you think about Nena Charley and the condition
11 that she was likely in had she had the test done. All
12 right. Would they have been abnormal?

13 MR. EATON: Objection, form.

14 MS. SHERRELL: Join.

15 A. They may have been entirely normal, or more
16 likely than not, they would have been shown just a low
17 platelet count, which is a -- a nonspecific finding, and
18 not helpful by its- -- not helpful enough by itself.

19 Q. And --

20 A. So the situations are -- are very different.

21 Q. So a low platelet count, and we looked at your
22 other article about how if a patient has progressive
23 symptoms --

24 A. Uh-huh.

25 Q. -- it would mean that their platelet count would

Page 191

1 It's not an hour. A stat order of a CBC in an ER, do you
2 know what the standard of care requires for how fast that
3 CBC has got to come back?

4 MR. EATON: Objection, foundation.

5 A. I -- I don't know or -- or what it was at that --
6 at that time, and what -- and how -- and the difference.
7 You know, I mean, there are a lot of things that can --
8 that could influence that.

9 Q. So the CBC finding that you said yells
10 hantavirus --

11 A. Right.

12 Q. Okay. What was it on the ER lab findings that
13 yelled hantavirus?

14 A. That was the primary.

15 Q. The CBC?

16 A. Result of the CBC.

17 Q. And what on the CBC?

18 A. The elevated hematocrit --

19 Q. Uh-huh.

20 A. -- the thromboc- -- the low platelet count, the
21 left shift, the myelocytes, so forth, and it looks like
22 they actually -- I -- it looks like they asked for a --
23 they may have asked -- or they're -- I don't know the
24 timing of the smear evaluation, but there -- anyway, it
25 came back with an evaluation where the immunoblasts, which

Page 193

1 do what later in the day?

2 MR. EATON: Objection, form.

3 A. I don't recall whether that one talked about
4 progression, but -- but in my -- part of my general
5 knowledge is that the platelet counts tend to -- tend to
6 continue to -- to drop early on in the -- you know, they
7 start -- there's -- usually a couple days into the
8 prodrome, probably more than half will be down, and then as
9 the disea- -- as you progress, say, to the cardiopulmonary
10 phase, they tend to go down --

11 Q. Uh-huh.

12 A. -- further.

13 Q. And so this is sort of always a -- the reality
14 question, okay, because you already said -- which, you
15 know, should be painfully obvious to everybody -- when Nena
16 Charley came in about 1:30 in the morning on May 28th, she
17 had hantavirus; right?

18 A. I'm not -- well, I don't think I said that --
19 anything about being painfully obvious to everyone. You
20 know, I think I said that --

21 Q. I'm not saying you said that. That's --

22 A. I said --

23 Q. -- those are my words.

24 A. Oh, I see. Well --

25 MR. CHECKETT: Form, foundation.

49 (Pages 190 to 193)

<p style="text-align: right;">Page 230</p> <p>1 Q. Okay.</p> <p>2 A. -- that we talked about, excluding that first</p> <p>3 one, her sort of aspirational hope that we try to get</p> <p>4 people in the prodromal phase --</p> <p>5 Q. Uh-huh.</p> <p>6 A. -- referred. Everything that follows that,</p> <p>7 the -- the supportive care is oxygen --</p> <p>8 Q. Okay.</p> <p>9 A. -- avoiding intubation if you can.</p> <p>10 Q. Uh-huh.</p> <p>11 A. Inotropes if -- if necessary.</p> <p>12 Q. Which are?</p> <p>13 A. Pressors.</p> <p>14 Q. Pressors?</p> <p>15 A. Drugs that support blood pressure and cardiac</p> <p>16 output.</p> <p>17 Q. Uh-huh.</p> <p>18 A. There's probably one more on there, but those --</p> <p>19 that's the supportive care we're -- we're talking about.</p> <p>20 Q. Okay. Would you --</p> <p>21 A. And -- and -- go ahead.</p> <p>22 Q. Is there anything else?</p> <p>23 A. No. I'm just trying to remember the slide, and,</p> <p>24 you know, it's -- it's sort -- it's kind of the advice that</p> <p>25 I would give, but if I -- if I left out one thing she had</p>	<p style="text-align: right;">Page 232</p> <p>1 presentation, and all the literature that we've attached so</p> <p>2 far to your deposition, if the rural hospital is doing the</p> <p>3 things that you're trying to train everyone to do, either</p> <p>4 get it early or get it in the early phase of</p> <p>5 cardiopulmonary for hantavirus, what is the survival at</p> <p>6 that point if they do what you're training them to do?</p> <p>7 MR. EATON: Objection, form and foundation.</p> <p>8 MS. SHERRELL: Join.</p> <p>9 A. There's a -- so there's a range of survival.</p> <p>10 Q. Sure.</p> <p>11 A. It depends on -- that if they progress, if they</p> <p>12 progress, that the interval to -- to refractory shock</p> <p>13 and -- and code is long enough to -- that if it's going to</p> <p>14 be necessary that the -- that you have arter- -- arterial</p> <p>15 venal -- venous lines in place, and the -- the ECMO machine</p> <p>16 at the bedside.</p> <p>17 So that's -- that's going to -- that's going to</p> <p>18 depend, and I -- and the reason I say it's a range, and</p> <p>19 it's hard to give exact numbers, is that the numbers I gave</p> <p>20 before, like at best 35 -- or best 65 to 75 percent</p> <p>21 survival, or in an ideal setting, where this is occurring</p> <p>22 at the tertiary care center with the ECMO right there, and</p> <p>23 it's occ- -- and it's also occurring in people who survive</p> <p>24 long enough to get -- to get to that point.</p> <p>25 I think she -- the difficulty I have with her</p>
<p style="text-align: right;">Page 231</p> <p>1 on there, I wouldn't be surprised.</p> <p>2 Q. And so she's in the hospital. She's starting to</p> <p>3 experience that first kind of symptom that you would expect</p> <p>4 from the progression and the way the hantavirus behaves --</p> <p>5 A. Uh-huh. Yes.</p> <p>6 Q. -- and the appropriate supportive care is given,</p> <p>7 oxygen, pressors if that's necessary. Would you expect a</p> <p>8 call is going to get made because --</p> <p>9 A. Yeah. At some point, it -- it depends on whether</p> <p>10 it's -- so there's probably a -- at some point, there's</p> <p>11 going to be a -- a CBC is going to be drawn, basic -- some</p> <p>12 other basic labs, and within some time period, there's</p> <p>13 probably -- there's going to be a call made.</p> <p>14 Q. To a higher level of care, the PALS Line --</p> <p>15 A. To the --</p> <p>16 Q. -- for instance?</p> <p>17 A. Yes, to the PALS Line, or something equivalent,</p> <p>18 to discuss --</p> <p>19 Q. Okay. So --</p> <p>20 A. -- the appropriate care, which we can see from</p> <p>21 the -- their notes that Dr. Vasquez was providing some of</p> <p>22 these same guidelines on supportive care, as well as some</p> <p>23 discussion of tran- -- of transfer.</p> <p>24 Q. Okay. So for all the training and stuff, like</p> <p>25 whatever the last number exhibit was, 17 or 16, the</p>	<p style="text-align: right;">Page 233</p> <p>1 particular case is that she progressed so rapidly that</p> <p>2 she's -- it's not unheard of for this, but she's in a --</p> <p>3 in -- she's in a ter- -- she -- she progressed particularly</p> <p>4 rapidly, and most of the time when that -- when you have a</p> <p>5 progression -- in my experience, most of the time if you</p> <p>6 have progression at this rapid in a rural center, that</p> <p>7 it's -- it -- it's -- it's likely to have a -- a -- a -- a</p> <p>8 fatal outcome --</p> <p>9 Q. So do you --</p> <p>10 A. -- and I've reviewed -- I've reviewed, you know,</p> <p>11 medical records of -- of ECMO and teams, ECMO teams being</p> <p>12 sent out remotely to centers, and this is not an uncommon</p> <p>13 outcome, and it's those --</p> <p>14 Q. Do you remember my question?</p> <p>15 A. You're asking me for what the -- for -- again,</p> <p>16 for a number or a range and -- I believe.</p> <p>17 Q. A number and a range, assuming that Nena is in</p> <p>18 the hospital when she gets to that very beginning res- --</p> <p>19 cardiopulmonary phase of hantavirus, and that they -- the</p> <p>20 hospital and the people that work there are doing the</p> <p>21 things that you guys are training them to do, and that's</p> <p>22 what happens.</p> <p>23 MR. EATON: Objection --</p> <p>24 Q. All right.</p> <p>25 MR. EATON: -- form and foundation.</p>

59 (Pages 230 to 233)

Page 234

1 Q. That I want to know what the expected survival
2 rate is based on those factors.

3 MR. EATON: Objection, form and foundation.

4 MS. SHERRELL: Join.

5 A. A hypothetical situation.

6 Q. Clearly, because she --

7 A. But with --

8 Q. -- was not in the hospital.

9 A. But with her -- but with her -- with the rate
10 that she progressed being on this -- on the really severe
11 end, and the subsequent -- and at the subsequent pace of --
12 once hantavirus was recognized in her case, sort of the
13 subsequent pace of res- -- phone calls and response is
14 going to be pretty similar.

15 It -- so its -- in terms of how long it gets --
16 it takes to get the team together and so forth. I think
17 there is a small chance that they get there in time to
18 cannulate her and start ECMO before she codes, and then --
19 well, it's -- but it's only with that chance that she has
20 a -- a chance of survival, and it's -- for all that to
21 occur in that time period, I think it's going to be more in
22 the range of 10, 25 percent, as I think about it.

23 Q. So when you're talking to the groups of
24 physicians, the clinicians, where you're training them
25 about the things to do -- and if I had Dr. Harkins right

Page 236

1 based on the literature, is X, what's the X?

2 A. We don't --

3 MR. EATON: Object- --

4 A. I don't do that.

5 Q. Do you tell them that your patient should
6 survive --

7 A. No.

8 Q. -- if you follow these?

9 A. Oh, no, absolutely not.

10 Q. And so all the publications that are attached to
11 your deposition that give survival rates that are 75, 80
12 percent, are you saying they're not based on anything?

13 A. I think I've described what the studies are based
14 on.

15 Q. Do you think that they can be translated to
16 the -- you know, the population of people that have
17 hantavirus?

18 A. Presenting at rural hospitals, no, not directly.

19 Q. I thought you said hantavirus is much more
20 prevalent in rural spaces than in urban ones; right?

21 A. The -- I don't follow.

22 Q. Hantavirus --

23 A. I mean, the patient -- those patient -- the
24 in-hospital -- I think I've already said that those
25 in-hospital series are in patients who've survived to get

Page 235

1 here, and I said, so you're training of the clinicians in
2 the area, and Dr. Knust from the CDC, say, so your training
3 works. People are trying to identify hantavirus early, and
4 they follow what you tell them to do.

5 In those training sessions, what are you telling
6 the clinicians the chance of survival is if they follow
7 what they're being told is the right thing to do?

8 MR. EATON: Objection, form and foundation.

9 MR. CHECKETT: Asked and answered.

10 A. I don't -- yeah, I don't believe --

11 MS. SHERRELL: Join.

12 A. -- we are telling them.

13 Q. Because I think it's on those slides, what the
14 chance of survival is if they do what you tell them --

15 A. No.

16 Q. -- to do.

17 A. No. I think it's -- that's describing the
18 outcome of a in-hospital series at UNM, and it's consistent
19 with any in-hospital -- small -- much smaller in-hospital
20 series. So it's not this patient.

21 Q. So in -- when you're out talking to the public --
22 or I shouldn't say the public, other clinicians --

23 A. Yes.

24 Q. -- about the right thing to do, and you're saying
25 if you do these things, your patient's chance of survival,

Page 237

1 to the hospital, to get onto -- get ECMO initiated before
2 they are intubated and before they're -- or to have -- at
3 least have the -- the catheters placed before they're
4 intubated.

5 So they're rural -- they're largely patients from
6 rural areas that haven't progressed as fast as this -- as
7 our unfortunate patient did, who survive the transport and
8 get to the -- get to the hospital, and that's what
9 they're -- that's what they're reflecting.

10 Q. Can you con- --

11 A. So they're not -- it's -- that's why -- when
12 you're saying they're not rural, that I said it's not
13 rural, it is, but the pa- -- the patient series is in a
14 tertiary urban referral center.

15 Q. Sure. So can you conceive of the fact that they
16 just missed the diagnosis they should have made at 1:20,
17 and that Nena Charley got the right care that she needed
18 back at 1:20? Can you conceive of that?

19 MR. EATON: Objection, form and foundation.

20 Q. Because we know she had hantavirus. Can -- can
21 you conceive of that being a fact, that they just missed
22 the diagnosis, that it was there, but they missed it?

23 MR. CHECKETT: Form --

24 MS. SHERRELL: Foundation.

25 MR. CHECKETT: -- foundation.

60 (Pages 234 to 237)

Page 254

1 are reading from a document, he's entitled to see the
2 context of what that document is. He's entitled to see the
3 entire document, so he can know what it's about, where it's
4 from, what else is said in the record.

5 MS. CURTIS: No, he's not. Why? I asked
6 him if he knows where that --

7 Q. Do you know where you made that statement?

8 A. No.

9 Q. Does that sound like a statement you would make?

10 A. It may be from me. It's -- it's -- it could be
11 from -- certainly is likely to have been from me, but I --
12 I wish I knew where it was from to kind of know the --
13 the -- the time frame over the -- and context.

14 Q. Do you believe that part of the point of your
15 training of other physicians is to try to teach them about
16 the prodrome phase, so that you can catch hantavirus before
17 it progresses to the cardiopulmonary phase?

18 A. No.

19 Q. Then what is the point of treating them about the
20 prodrome phase?

21 A. It's part of the disease. It's part of the
22 natural history of the disease. So under- -- to -- for
23 them to have an understanding of hantavirus disease is --
24 is to understand all of the -- the phases.

25 Q. So do you tell your providers out in the rural

Page 256

1 place right now. It's one of the things that when I was
2 chief, we discussed what -- what aspects -- which different
3 services should be involved. So we would -- there are
4 various services that we would talk about being -- being
5 important that they're being involved in, and that was
6 infectious disease, critical care, ECMO, which initially
7 was all pediatric -- all pediatric critical care, because
8 that's all the experience in the first decade or two was in
9 pediatrics.

10 Hematopathology. Those are the ones that I
11 remember we -- we talked about trying to involve.

12 Q. The survival from hantavirus, is it impacted by
13 the patient's age, if they're under 65, for instance?

14 A. I mean, actually -- I mean, I think the
15 interest- -- one of the interesting things about the
16 disease is it's -- it's a sev- -- it's a disease --
17 included in a severe disease of young adults and is less
18 common in children and elderly people.

19 Survival at -- in my age group would be
20 impact- -- it might be impacted by the fact that they
21 wouldn't want to put me on ECMO.

22 Q. Okay.

23 A. But basically, it's -- it's young adults. So
24 she's in a age group with severe disease, and her age would
25 be -- if you're implying that because of her -- she's a

Page 255

1 areas to transfer the patient prior to them getting a
2 co- -- cardiopulmonary -- let me state that over. So do
3 you tell your providers out in the rural areas to transfer
4 the patient prior to them getting into a cardiopulmonary
5 phase to a tertiary center, preferably one with ECMO?

6 A. I don't know the context of -- of that, if that's
7 something that I wrote. Do I tell providers if -- there's
8 that aspirational statement that Dr. -- well, you weren't
9 asking about Dr. Harkins. What I tend to focus on is
10 the -- the difficulty of -- of recognizing it in that
11 stage, and I think if you look at the chapters, you'll see
12 that theme.

13 Q. So have you been present when Dr. Michelle
14 Harkins has said, So we tell our providers out in the rural
15 areas to transfer the patient prior to them getting into a
16 cardiopulmonary phase to a tertiary center, preferably one
17 with ECMO, which we do at our center?

18 MR. EATON: Objection, foundation.

19 A. So those are her words?

20 Q. Is that something that you remember hearing her
21 say?

22 A. No. No. Tha- -- that's --

23 Q. Does UNM have a multidisciplinary team to take
24 care of patients with hantavirus?

25 A. I can't address whether it's -- and what's in

Page 257

1 young adult, relatively young adult, she would have a
2 better survival, I -- I disagree.

3 Q. With supportive therapy for a patient that has
4 hantavirus, the likelihood of surviving hantavirus
5 increases with early recognition, hospitalization and
6 adequate pulmonary and hemodynamic support; right?

7 MR. CHECKETT: Form, foundation.

8 MR. EATON: Join.

9 MS. SHERRELL: Join.

10 A. Overall, that's -- that's true, and the -- the
11 point is you don't want to let them get to -- what we mean
12 by early there is -- is before they are in refractory shock
13 or arrest, so -- and it's to a -- it's also, to a certain
14 degree, aspirational.

15 We want to make the point, is, don't wait and --
16 once -- if they're -- you think they're in the
17 cardiopulmonary phase, don't wait and watch and see how
18 se- -- whether -- whether they get worse. We want to -- we
19 want to drum -- drum in the message to -- to call right
20 away, as soon as you think about it.

21 Q. Think about hantavirus?

22 A. In the cardiopulmonary phase, yes, as soon as
23 you're --

24 Q. Only in the cardiopulmonary phase, not if you
25 think it might be in the prodromal phase?

65 (Pages 254 to 257)

Page 258

1 **A. It's not so much the -- that's not so much the**
2 **focus of it, and the pro- -- the problem -- the problem**
3 **being the difficulty of differentiating the patients in**
4 **prodrome from other diseases.**

5 Q. So in the cardiopulmonary phase, given the role
6 of capillary leak in the development of noncardiogenic
7 pulmonary edema and hypotension, early use of vasopressors
8 and inotropes for management of hypotension and caus- --
9 cautious use of intravenous fluids is strongly recommended
10 for the treatment of hantavirus; right?

11 **A. I don't know where the sentence came from. There**
12 **are some grammatical, structural problems in the way I**
13 **heard it, but --**

14 Q. Do you want me to say it over again to see if you
15 believe --

16 **A. I can --**

17 Q. -- it's true?

18 **A. Well, I think -- so the -- I guess the -- the**
19 **thing that I heard that struck me is -- maybe being off**
20 **was -- you're saying role of capillary leak in development**
21 **of the pulmonary edema, yes, but I -- I thought that you --**
22 **that there was something about the capillary leak playing a**
23 **role in -- in cardiogenic shock, and I --**

24 Q. I didn't use the word "shock." So let me just
25 state it again, so you hear it. Given the role of

Page 259

1 capillary leak in the development of noncardiogenic
2 pulmonary edema and hypotension, early use of vasopressors
3 and inotropes for management of hypotension and cautious
4 use of intravenous fluids is strongly recommended for the
5 treatment of hantavirus.

6 **A. Yeah. The --**

7 Q. Do you agree with that statement?

8 **A. So it -- it might apply to hypotension because of**
9 **the -- the shift. So as long as it doesn't say cardiogenic**
10 **shock, but that's really what you're going after with**
11 **inotropes, and you don't want to give more fluid because**
12 **you're just pouring more fluid into the lungs at that point**
13 **when -- so --**

14 Q. Okay. So I just --

15 **A. So there -- so overall, it's okay. I mean, I**
16 **just think that if I could see where the commas are and**
17 **what -- or when it was written and what sense, but it --**
18 **it's -- I'm not sure it's worth quibbling over it.**

19 MS. SHERRELL: Can we take a quick bre- -- a
20 break, so the videographer can check and see how long we've
21 been on the record?

22 MS. CURTIS: I'm actually just going to say
23 I don't have any other questions. So I'm going to pass the
24 witness.

25 MR. CHECKETT: Okay.

Page 260

EXAMINATION

1 BY MR. CHECKETT:

2 Q. All right. Doctor, my name is John Checkett. I
3 represent Nurse Sales, the triage nurse in the first ER
4 visit, and Next Medical Staffing. Let me ask you -- I just
5 have a few questions for you. You referenced earlier
6 that -- words to the effect that the hantavirus that Ms. --
7 or Mrs. Charley had -- let me find my exact wording -- had
8 a rapid onset. The rate that she progressed was rapid, as
9 well as the subsequent pace.

10 Is that generally true of your characterization
11 of Mrs. Charley's hantavirus?

12 MS. CURTIS: Objection, form.

13 **A. I thought it was part- -- particularly rapid in**
14 **her case.**

15 Q. Okay. And so I'm going to ask you a followup
16 question to this, but I -- instead of having you look at
17 the record, what I did was, for the first ER visit, I
18 looked at the triage vitals and the discharge vitals, and
19 let me just kind of run those down for you -- because I
20 know we've been going a long time, and it's -- it's turned
21 into an endurance contest here -- is for triage, the
22 temperature was 99.5, at discharge, 98.3.

23 Blood pressure in triage, 131 over 92.

24 Discharge, 125 over 82. The pulse in triage was 119,

Page 261

1 discharge, 101. Respiratory rate in triage, 20. At
2 discharge, 19. O2 sats in triage were 93 percent on room
3 air, 95 percent on room air at discharge. The pain in
4 triage was at 8, and at discharge was at 5.

5 My question to you -- and first, an observation.
6 It sounds like the temperature or blood pressure, pulse,
7 respirations and pain were all reduced from the point in
8 triage to discharge. Does that sound generally correct?

9 **A. Yes.**

10 MS. CURTIS: Objection, form.

11 Q. As far as the O2 saturations, a person's
12 oxygenation, Mrs. Charley's oxygenation, her oxy- --
13 oxygenation actually went up from 93 percent room air to 95
14 percent on discharge. Would that be a correct statement
15 from what I told you?

16 MS. CURTIS: Objection, form.

17 **A. That's my understanding, and that they're both --**
18 **but that they're both normal, to begin with.**

19 Q. Okay.

20 **A. So they -- neither would jump out at me.**

21 Q. So with this rapid progression that was marked by
22 Mrs. Charley's hantavirus, as well as really nonspecific
23 vital signs in the ER in that first visit, would you agree
24 with me that Mrs. Charley had a -- a more problematic
25 version of hantavirus than you've seen -- than you've seen

66 (Pages 258 to 261)

Page 274

1 that she had reported being exposed to mouse droppings?
 2 **A. No.**
 3 Q. In review of her husband's deposition testimony,
 4 is it your understanding that he gave conflicting testimony
 5 about whether he heard his wife report being exposed to
 6 mouse droppings?
 7 MS. CURTIS: Objection, form, foundation.
 8 **A. Yes, that was my impression, in terms of --**
 9 **conflicting in terms of the timing.**
 10 Q. During -- during Ms. Curtis' examination of you,
 11 were -- you were asked very -- or several hypotheticals,
 12 and then you were asked to give any numbers for chances of
 13 survival. If you were to provide -- or if you had provided
 14 any number for a survival, was that given to a reasonable
 15 degree of medical probability?
 16 MS. CURTIS: Objection, form.
 17 **A. I believe so.**
 18 Q. Was tho- -- were those numbers tied to the facts
 19 of this case?
 20 MS. CURTIS: Objection, form.
 21 **A. Lar- -- largely, no, because they were**
 22 **hypotheticals.**
 23 Q. Was there any reason to keep Ms. Charley at the
 24 hospital after her first visit to GIMC?
 25 MS. CURTIS: Objection, form, foundation.

Page 276

1 **the total was something like 13. So I was involved with --**
 2 Q. Thirteen cases --
 3 **A. Yes.**
 4 Q. -- that you testified for the US attorney on?
 5 MR. EATON: Objection, form.
 6 **A. The -- excuse me, the -- the -- no.**
 7 Q. There were not 13 cases?
 8 **A. There were cases of hantavirus, and they asked**
 9 **me -- they got my involvement in five of the cases.**
 10 Q. Did you give a similar causation opinion?
 11 **A. I'm not sure I can answer. There -- I gave**
 12 **causation in -- in terms of -- when -- when they -- I think**
 13 **that some of the attorneys maybe initially hoped that I**
 14 **would say that it was unclear that these people had**
 15 **acquired hantavirus at Yosemite, and I -- and my opinion**
 16 **was caus- -- so that was a causation opinion, and I -- my**
 17 **opinion was that they had acquired it at Yosemite, those**
 18 **five individuals. Is that --**
 19 Q. Well, I mean, did you give -- all my question
 20 was, did -- I mean, this patient had hantavirus. That's
 21 not in question. My -- my question was whether you gave a
 22 similar opinion that you gave in this case in those cases.
 23 MR. CHECKETT: Foundation.
 24 **A. Yeah. I'm sorry. That would be very difficult**
 25 **to answer because of the --**

Page 275

1 **A. No.**
 2 Q. Was there any action by the providers at
 3 Gallup -- medical providers at Gallup Indian Medical Center
 4 during Ms. Charley's first visit that led to a lost chance
 5 of survival?
 6 MS. CURTIS: Objection, form.
 7 **A. No.**
 8 Q. Was there any inaction on the part of any of the
 9 medical providers at Gallup Indian Medical Center that led
 10 to a lost chance of survival of Ms. Charley?
 11 MS. CURTIS: Objection, form.
 12 **A. No.**
 13 MR. EATON: I'll pass the witness at this
 14 time.
 15 FURTHER EXAMINATION
 16 BY MS. CURTIS:
 17 Q. I thought I asked your experience with the US
 18 attorney earlier, and you told me about one case involving
 19 Yosemite. I'm not sure you answered my --
 20 **A. Five --**
 21 Q. -- question fully.
 22 **A. There were five. Oh, I'm not -- I'm not sure I**
 23 **did either. So there were -- that case -- that involvement**
 24 **involved five of the individuals who became -- who were**
 25 **infected as part of the out- -- Yosemite outbreak. I think**

Page 277

1 Q. You just don't remember if their cases of
 2 hantavirus were survivable or diagnosable earlier, or any
 3 of those issues?
 4 **A. Oh, I do remember.**
 5 Q. Okay. So were your answers to questions
 6 regarding those issues similar to what they are in this
 7 case?
 8 **A. I guess, I was -- basically, yes. I -- the**
 9 **issues at play were -- were different than this case.**
 10 **they -- the -- the -- none of -- none of the issues were**
 11 **related to the care that they subsequently -- or whether**
 12 **the care that they subsequently received was appropriate or**
 13 **not. That wasn't the focus.**
 14 Q. Did any of those people die?
 15 **A. Yes.**
 16 Q. Did you say that they all were unsurvivable, that
 17 they were going to die no matter what, like you're saying
 18 in this case?
 19 MR. EATON: Objection, form.
 20 MR. CHECKETT: Join.
 21 **A. I don't believe -- well, I think they were --**
 22 **they were different. There were two -- but there were two**
 23 **that were similar that progressed extremely rapidly. I**
 24 **think EC- -- there were attempts to get ECMO, and both --**
 25 **and both died before the ECMO could be -- they could get**

70 (Pages 274 to 277)